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| 09/909,538 | 07/20/2001 | Paul Hopewell | GB920000033US2 | 1972 |
| 25259 | 7590 | 03/25/2004 | EXAMINER | |
| IBM CORPORATION 3039 CORNWALLIS RD. DEPT. T81 / B503, PO BOX 12195 REASEARCH TRIANGLE PARK, NC 27709 | | | CHEN, CHONGSHAN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2172 | |
| DATE MAILED: 03/25/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/909,538

Applicant(s)

HOPEWELL ET AL.

Examiner

Chongshan Chen

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 7 January 2004 have been fully considered but they are not persuasive.
2. As per applicant's arguments regarding the references do not teach assigning the index key in response to commit (the commit that places the message on the queues) have been considered but are not persuasive. The commit that places the message on the queue claimed by the applicants is the enqueue operation disclosed by Chandra. The enqueue operation accepts parameters such as message identifier and assigns the identifier to the message when placing the message on queue. Therefore, Chandra teaches assigning the index key/identifier in response to commit/enqueue (Chandra, col. 12, line 61 – col. 16, line 16).
3. As per applicant's arguments regarding “this timing of assignment is not believed to be taught in the prior art; and indeed, it appears the Chandra teaching, with its lock approach, actually teaches away from Applicants improvement” have been considered but are not persuasive. Chandra teaches the timing of assignment, assigning index key in response to commit/enqueue (Chandra, col. 12, line 61 – col. 16, line 16, and see reason above). There is no lock involved in the enqueue operation.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandra et al. ("Chandra", 6,058,389) in view of Hallmark et al. ("Hallmark", 5,857,180).

As per claim 1, Chandra teaches a method of managing retrieval of messages from a queue, each message on the queue having been sent by a sender application program, the method comprising:

assigning an index key to a message in response to commit of the operation of putting the message on the queue, wherein the assigned index key comprises an attribute value of the message which was specified by the sending application when the message was sent (Chandra, col. 19, lines 46-49, col. 12, line 61 - col. 13, line 65); and

in response to a receiver application program requesting retrieval of messages from the queue and specifying the attribute value (Chandra, Fig. 9A-9C, col. 16, lines 6-55),

whereby the index key assigned to the message in response to said commit provides an index which is usable for identifying committed messages having the particular application-specified attribute value (Chandra, col. 19, line 45 - col. 20, line 60).

Chandra does not explicitly teach monitoring the availability of messages in the queue. Hallmark teaches monitoring the availability of messages in the queue (Hallmark, col. 14, lines 2-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include monitoring the availability of messages in the queue in the system of Chandra to monitor the availability of data and notify the system when the message is available. Because the method of monitoring the availability of messages will detect and trigger

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the system to retrieve the message, it provides the system the functionality to automatically retrieve messages without the needs to constantly check when the message is available.

As per claim 2, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 1, and further teach in response to the monitoring step identifying the availability of a committed message in the queue which has the assigned index key (Hallmark, col. 14, lines 2-5), determining whether the message matches other criteria of the retrieval request (Chandra, col. 16, line 17 - col. 17, line 65, col. 19, line 45 - col. 20, line 60); and in response to a positive match, sending a response to the application program which issued the request (Chandra, Fig. 9A-9C).

As per claim 3, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 2, and further teach wherein the response includes the message which matches the request (Chandra, Fig. 9A - 9C).

As per claim 4, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 1, and further teach wherein the attribute value included in the assigned index key is a message identifier or a correlation identifier (Chandra, col. 13, lines 31-36, col. 15, lines 4-8).

As per claim 5, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 1, and further teach wherein receiver application programs are able to issue retrieval requests with a wait attribute (Chandra, col. 16, lines 33-36), and wherein the method includes:

responsive to no messages which match the request being available in the queue when the request is issued, triggering a monitoring process to perform the monitoring step (Chandra, col. 18, lines 8-19, Hallmark, col. 14, lines 2-5); and

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responsive to the monitoring step identifying the availability of a committed message in the queue having said assigned index key, determining whether the message matches a waiting retrieval request and, if matching, sending a response to the application program which issued the request (Chandra, Fig. 9A - 9C, col. 16, lines 6 - 55)

As per claim 6, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 1, and further teach wherein the queue is a shared access queue held in a list structure of a Coupling Facility to which a plurality of resource managers can connect to put messages on the queue and to retrieve messages from the queue on behalf of respective sender and receiver application programs (Chandra, Fig. 2, col. 6, lines 64-65, col. 12, lines 19-22).

As per claim 7, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 6, and further teach wherein the step of assigning an index key at commit time comprises a resource manager which put the message on the shared queue providing the attribute value to the Coupling Facility in response to committing the put operation, the Coupling Facility then building the index key and storing it in association with the enqueued message (Chandra, col. 12, line 61 - col. 13, line 24, col. 19, lines 46-57).

As per claim 8, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 6, and further teach the assigned index value for each message is held in a predefined control data area of the Coupling Facility list structure which holds the queue (Chandra, Fig. 2, Fig. 4B, col. 20, lines 1-9).

As per claim 9, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 8, and further teach wherein the predefined control data area of the Coupling Facility list structure is a Coupling Facility list entry control data area, and the predefined control data area

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holds a message identifier and a correlation identifier for the message, the assigned index key comprising one of said message identifier or correlation identifier (Chandra, Fig. 2, 4B, col. 19, lines 46-49).

As per claim 10, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 6, and further teach wherein the monitoring step is performed by a monitoring process within the Coupling Facility in response to receipt of a retrieval request which specifies said attribute value, the monitoring process including:

means for determining whether an identified available message matches all criteria of the received retrieval request (Chandra, Fig. 9A-9C, col. 16, lines 6-55); and

means, responsive to a positive match, for sending a response to the application program which issued the request (Chandra, Fig. 9A-9C, col. 16, lines 17-22).

As per claim 11, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 10, and further teach invoking said means for determining a match for all identified messages in said queue which have said assigned index value corresponding to the application-specified attribute value (Chandra, Fig. 9A-9C, col. 16, lines 6-55, col. 19, lines 46-57).

As per claim 12, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 1, and further teach wherein the assigned key comprises a secondary index key representing a sender-application-assigned attribute and can be used to identify messages in response to a retrieval request which specifies said attribute, and an additional primary index key comprising sequencing information is assigned to a message when the message is placed on the queue; and wherein the primary index key is used to select a message for retrieval from the

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available messages identified in the monitoring step which used the secondary key (Chandra, col. 19, line 44 - col. 20, line 9, col. 16, lines 17-55).

Claims 13-14 are rejected on grounds corresponding to the reasons given above for claims 1-2.

Claim 15 is rejected on grounds corresponding to the reasons given above for claim 1.

As per claim 16, Chandra teaches a data processing apparatus including:

storage means (Chandra, col. 4, lines 18-35);

a data processor (Chandra, col. 4, lines 18-35);

a resource manager component for storing messages within a queue and storing index keys in association with the enqueued messages for use in retrieval of the messages from the queue (Chandra, col. 4, lines 50-55, col. 19, line 45 - col. 20, line 9), the resource manager component including:

means for assigning an index key to a message in response to commit of the operation of putting the message on the queue, wherein the assigned index key comprises an attribute value of the message which was specified by the sending application when the message was sent (Chandra, col. 19, line 45 - col. 20, line 9); and

means, responsive to a receiver application program requesting retrieval of messages from the queue and specifying the attribute value (Chandra, Fig. 9A-9C, col. 16, lines 6-55),

whereby the index key assigned to the message in response to said commit provides an index which is usable for identifying committed messages having the particular application-specified attribute value (Chandra, col. 19, line 45 - col. 20, line 60).

Chandra does not explicitly teach monitoring the availability of messages in the queue. Hallmark teaches monitoring the availability of messages in the queue (Hallmark, col. 14, lines 2-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include monitoring the availability of messages in the queue in the system of Chandra to monitor the availability of data and notify the system when the message is available. Because the method of monitoring the availability of messages will detect and trigger the system to retrieve the message, it provides the system the functionality to automatically retrieve messages without the needs to constantly check when the message is available.

As per claim 17, Chandra and Hallmark teach all the claimed subject matters as discussed in claim 16, and further teach wherein the resource manager component includes means, responsive to the monitoring step identifying the availability of a committed message in the queue which has the assigned index key (Hallmark, col. 14, lines 2-5), for determining whether the message matches other criteria of the retrieval request (Chandra, col. 16, line 17 - col. 17, line 65, col. 19, line 45 - col. 20, line 60), and the apparatus further includes means, responsive to a positive match, for sending a response to the application program which issued the request (Chandra, Fig. 9A-9C).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Murakata et al. (5,999,964) disclose method of accessing message queue and system thereof.

Pawlowski (5,696,910) discloses assigning as identifier to a transaction as it is placed into a queue (col. 11, lines 53-54).

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chongshan Chen whose telephone number is 703-305-8319. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (703)305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 17, 2004


SHAHID ALAM
PRIMARY EXAMINER